California's Health

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HEALTH PROBLEMS AS AFFECTED BY IRRIGATION AGRICULTURE*

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In the past it has been customary to consider problems of public health as though they were a separate and distinct, although admittedly important, part of our pattern of living. We have, for example, referred to the "public health aspects" of this or that broad problem in the belief that protection of the public's health could be achieved by adding retroactively certain protective measures to a system or operation which was designed to serve some broad constructive purpose.

In part this viewpoint has been encouraged by public health agencies themselves. Since many of the advances in public health have had to do with the communicable diseases and have been achieved through the application of vaccines and other protective inoculations, public health has become associated with and identified as a "medical matter," and therefore considered as "doctors' business."

With the development of a real concern with the health of the world's population, however, brought about primarily through the establishment of the World Health Organization, a new concept of public health has emerged. In 1946 the constitution of the W. H. O. defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." When one adopts this concept, he realizes that control of the mass outbreaks of communicable disease is but the first step in public health and that the broad, realistic objectives of public health have to do with man's successful adjustment to, or his judicious manipulation of, the particular environment of which he is a part both as an individual and as a community.

I would like, therefore, in this discussion to consider the broad subject of man's adjustment to an environment which, in this instance, is largely characterized by and dominated by irrigation agriculture. In order to keep the discussion on a tangible and down-to-earth basis, it will be confined to the problems with which we are grappling in California. This need not unduly restrict the scope since this State has an unusually wide range of geographic, topographic, climatic, and demographic situations in its small empire of irrigated agricultural lands.

Three Points of View

Our subject divides naturally into three points of view, equally fundamental and of comparable magnitude and importance.

Let us consider first the ways in which irrigation agriculture itself threatens man. This is the area of vector problems revolving principally around mosquitoes, flies, and rodents.

Mosquitoes form, at present, the principal vector threat to human welfare in California's great Central Valley. In an area naturally arid, with a subtropical climate, some 8 million acres of land have been placed under irrigation, and the State is now embarking upon a gigantic water resource project which will add another 8 million acres to make this one of the world's largest areas of irrigation agriculture. Three major types of irrigation are practiced: continuous flooding for rice culture; intermittent flooding of pasture lands; and intermittent irrigation of row crops such as cotton.

Under natural conditions, mosquito problems in California were largely confined to salt marshes along the coast and to fresh water marshes, and river bottom land where the anopheline species capable of transmitting malaria were predominant. The malaria threat in the Central Valley was for the most part confined to the vicinity of the two major stream systems. With the development of irrigated agriculture the mosquito problem was completely transformed both quantitatively and qualitatively. Quantitatively the area of water surface available and adapted to mosquito breeding increased at least fiftyfold and, what is most important, encompassed areas of human habitation. Qualitatively, two profound changes occurred. The new habitats for mosquitoes provided by irrigation patterns resulted in the appearance, in significant numbers, of new types of mosquitoes, bringing with them not only disease threat but a threat to man's very existence through sheer torment of numbers and vicious biting habits. *Culex tarsalis* is so peculiarly adapted to irrigation habitats that infectious Encephalitis, for which it is the most efficient vector,

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has emerged as a major disease threat in the irrigated areas. Furthermore, a species of *Aedes* mosquito, *A. nigromaculis*, unknown in California before 1935, now breeds so prolifically in pastures subjected to repeated flooding that neither man nor his livestock could inhabit the area without mosquito control.

Mosquito Control

The second qualitative change pertains to control methods. Filling and draining, the historical methods of controlling mosquitoes, are obviously restricted where water is applied for irrigation purposes. Chlorinated hydrocarbon insecticides have already lost their effectiveness in most of California's Central Valley due to the development of resistance by mosquitoes. It is inescapably evident now that the solution of the mosquito problem lies not in the application of an isolated remedy to an agricultural operation but rather in a modification of the agricultural operation to so manage land and water that some of the conditions necessary to the aquatic development of the mosquito are no longer present. Fortunately these necessary adjustments are compatible with modern concepts of agricultural technology.

Fly Potential

Flies are an indirect or peripheral result of irrigation agriculture in California. Flies are, of course, produced in urban areas wherever suitable food and moisture conditions are to be found in residential or industrial areas, but the predominant fly potential is that associated with the moist organic wastes of commercial animal operations such as poultry, rabbit, and hog ranches, or cattle feeding yards, or dairies, or associated with the semisolid wastes from the processing of fruits and vegetables. All of these activities are dependent upon irrigation agriculture.

The flight range of domestic flies from source areas to attractive resting and feeding areas has been demonstrated to exceed 20 miles. This being true, virtually the entire population of the State is brought into the range of effect of agricultural fly breeding areas. As is true of mosquitoes, the development of intensive irrigation agriculture in what was formerly a dry, warm area has resulted in an explosive vector fly potential, which, coupled with the invasion of the same area by cities and subdivisions, has produced a combined disease hazard and public nuisance problem of first magnitude.

In addition to mosquitoes and flies, irrigation agriculture results in vector problems associated with both terrestrial and aquatic gnats. The eye gnat (*Hippelates*) breeds in the moist soil of irrigated date farms and upon emergence not only causes great annoyance as a pest but is also capable of transmitting a painful form of conjunctivitis. Other biting and nonbiting gnats have become established in many lakes and reservoirs throughout California. Recreation and even habitation are frequently made virtually impossible without control. Snails, which are the intermediate hosts of trematode worms causing schistosome dermatitis, have also established themselves in impounded waters in California. Fortunately the more serious problem of Bilharziasis, associated directly with irrigation operations in many parts of the world, is not known to occur here.

Rodents are a matter of concern in California because they constitute the reservoir of a variety of diseases including murine typhus, tularemia, relapsing fever, Rocky Mountain spotted fever, leptospirosis, and salmonellosis. The most portentious threat, however, is perhaps that of plague. Intensive endemic surveys conducted continuously for a 25-year period in California have conclusively demonstrated that plague is widely and firmly established in the rural environment of the State. First demonstrated in Norway rats and ground squirrels, it has in recent years been shown that native field mice are probably the principal reservoir species. The intermingling of agricultural and urban activities in California has furnished ideal opportunities for transfer of ectoparasites, and consequently plague infection, from field to urban rodents. In the continuing problem of rodent control, as in that of mosquito and fly control, the early promise of an easy solution through use of chemicals has not materialized, thus forcing the realization that the environmental factors supporting rodents must be modified by adjustment of man's pattern of living in both urban and rural areas.

Wastes and Its Adverse Effects

The second point of view to which I would like to direct your attention is the adverse effects on both man and agriculture of wastes originating in agricultural areas. This subject has already been touched upon in the previous discussion of vector problems and it should be evident that the vector problems resulting from beneficial use of water for irrigation can be greatly magnified by waste of or wasteful use of water. More directly, however, some wastes in themselves constitute a threat to health. California's cities and towns are mostly served with community sewers, and in those which are not, the houses almost uniformly have water-flushed toilets with underground disposal of sewage on the premises. Even in the rural areas such conveniences are the standard pattern. In the actual harvesting of food crops in the field, however, not only are water-flushed toilets not available but even privies frequently are not provided, and disposal of human excreta presents a triple threat of contamination of the food crop, a source of contamination to flies which may travel to areas of habitation, and a decidedly unsafe working environment for the harvesting crews, particularly since handwashing facilities are also lacking. Where community sewers serve towns in the interior agricultural portion of the State, final disposal must be either to surface streams or to the land. Unless such sewage has received treatment, including disinfection, it presents the threat of water pollution if discharged to a stream and food contamination if used to irrigate food crops. In either case it presents a hazard to persons working in the area who may drink the water.

Protective Measures in Agricultural Communities

There is a tendency in an intensively developed area like California to assume that with the technical knowledge and equipment available to protect public water and food supplies that the individual person need not concern himself with these problems. While this is substantially true as regards the consumer of water or the purchaser of food and milk in

cities, the person in an agricultural setting is frequently exposed to risks of food, water, and personal contamination before the protective measures enjoyed by the city dweller can be applied. We tend not to realize the significance of leaving our "protected" cities and communities and bringing ourselves into intimate contact with the "raw" environment.

Industrial Waste as a Threat to Agriculture

The "sewage" from industry presents an entirely different kind of problem which may constitute a threat to agriculture. Industrial processes usually involve the large-scale use of soluble chemicals, and the incorporation of these chemicals in the waste water from our industries may make such water "poisonous" for later irrigation use. Even though no toxic chemicals are used, the mere increase in mineral content may render water unusable for irrigation. If irrigation agriculture may itself be classed as an industry, its liquid waste as represented by return irrigation water readily falls into the category in question and we are presented with the spectacle of an industry "poisoning" itself. If the industrial waste contains neither toxic chemicals nor a mere excess of minerals it may exert a still further "health" effect on irrigation agriculture. By containing in solution or suspension large amounts of organic material of fruit or vegetable origin, the liquid waste may exert an oxygen demand so great that it cannot be met either by oxygenation from the atmosphere or dilution by streams, and the resulting odor nuisances may far exceed those from the improper disposal of domestic sewage.

The control of agricultural pests in California is accomplished in part by the use of many tons of insecticides per year, and these are frequently applied by spraying or dusting techniques which use the atmosphere itself as a vehicle of distribution and application. Such contaminated air may drift away from the area of treatment and carry insecticide with it, which may be later deposited upon foodstuffs or inhaled by nearby residents. A far more severe threat of course exists if persons applying the insecticide inhale it or if toxic insecticides are deliberately applied to food crops.

Loss of Natural Resources

It may thus be seen that the wastes of agriculture and of man are capable of creating a threat to both agriculture and man. But the subject of waste is broader than this. In a far more fundamental sense, wastes are a threat because they are a loss of natural resources. The garbage and combustible rubbish of communities is an important and valuable resource. To burn it or bury it may seem to be desirable and convenient and is certainly to be preferred to open dumps which result in vector hazards and nuisances. In the long-range view, however, the continual "mining" of organic material, using it once and throwing it away, is a practice which would only be tolerated in an economy of waste and constitutes a real threat to the soil resource.

Water also is a limited resource. To discharge chemically suitable water into the ocean, as a means of "saving" part of the cost of biological stabilization of the organic material of domestic sewage origin which it contains, is usually a waste of a critical resource in a critical area. It is true that reuse of sewage for agricultural irrigation may be fraught with health hazards, as described earlier, but these problems can be solved without abandoning the concept of conservation of water by reuse.

Probably the greatest waste of natural resources that takes place in California is the waste of solar energy. As the petroleum resources of this State dwindle and the few remaining hydroelectric power opportunities become exploited, solar energy will emerge as a tremendous untapped potential. In the present state of solar energy technology, photosynthesis is probably the method of utilization of solar energy most ready to be exploited, and photosynthesis is in the realm of agriculture. If greater productivity of food per acre becomes a pressing necessity, as it well may in the next 25 years, California's irrigation agriculture, located well within the earth's solar belt, is indeed an area of opportunity. While much remains to be done in perfecting the techniques of maximum utilization of solar energy by photosynthesis, certainly it is suggestive that research carried out at the University of California in the controlled production of green algae, fertilized symbiotically by sewage, has shown that this technique produces 20 times as much protein and fat per acre per year as does grazing of cattle on irrigated pasture using conventional practices.

Threat of Population Pressures

The final point of view that I wish to review is the threat which sheer population pressure presents to irrigation agriculture. I think it is evident from this discussion that we cannot think of irrigation agriculture as separate from and unrelated to other developments that inevitably accompany it in a state like California. The development of a water resource plan to permit 8 million acres to be placed under irrigation in California was only possible as the total economy of the State expanded to absorb the costs. The next 8 million acres will call for the expenditure of additional billions of dollars. This can only be contemplated because California now has a strong economy based on balanced development of agriculture, industry, and communities, and a population of 14 million people, and is experiencing a steady growth and expansion of these factors which will with certainty continue for at least another 20 years.

Smog

One consequence of this simultaneous development of agriculture and industry and cities is air pollution and, in particular, that brand of air pollution so far largely confined to California, namely, smog. Smog has, without question, profound and far-reaching effects on human health, but even at levels below which it annoys human beings, smog affects living plants. The precise chemical composition of the component in smog that adversely affects living things has not been identified but it has been established with reasonable certainty that the raw materials of smog are hydrocarbons and that smog results from incomplete combustion of hydrocarbons in the atmosphere itself in the presence of sunlight and oxides of nitrogen. Smog is therefore a photosynthesis gone awry and a detri-

mental utilization of solar energy. The parts of the system subject to man's control are the fuels he uses and the manner in which he uses them. The motor vehicle constitutes the largest presently uncontrollable artificial factor in smog production, but this does not mean that only those motor vehicles operating in agricultural areas produce damage to crops. It has been demonstrated that contaminated air masses from urban areas can and do migrate bodily into surrounding areas, traveling a distance of many miles without losing their identity and potential for damage to crops. It may thus be seen that the development of cities and population centers may have a direct and profound adverse effect upon agriculture as a result of air pollution. Atmospheric phenomena and weather play a large part in smog formation, and it may well prove that the very areas suited to maximum development of irrigation agriculture are the areas most critical from an air pollution standpoint.

Land Use Planning

A second way in which population pressure threatens irrigation agriculture is in the field of land use planning. The current trend of urban development is away from the "vertical city" toward dispersed residential development with dispersed shopping areas and recreational facilities so that no one need "go to town" to shop or amuse himself. Even commercial and industrial developments are being deliberately dispersed. The result of this is that there is ever-keener competition for the best agricultural land. Flat land may not be the most attractive land to live on but it is the cheapest on which to develop subdivisions and it is the subdivider and not the buyer who selects the location. The great citrus belt of Southern California was once a wonderland of mile after mile of trees loaded with the real gold of California. Today this area presents the sorry sight of a few scattered and poorly kept orange groves, representing the last survivors against the creeping monster of endless subdivision tracts. It may thus be seen that not only does irrigation agriculture have the potential to threaten man's health and welfare, not only do the wastes originating in irrigated agricultural regions threaten both man and agriculture, but in addition the sheer population pressure concomitant with irrigation agriculture, unless surrounded by careful planning, poses a threat to agriculture itself.

It seems inevitable then that the day when agriculturists could concern themselves only with the problems of agriculture, public health agencies with problems of disease control, and planning agencies with problems of land use and location of industries and cities, has gone and will not return. Increasingly in the future we must each be "our brother's keeper" and this means that we must look together at the total problems of man and his environment.

Two Health Departments Win Crumbine Awards

San Jose City and San Diego County Health Departments have won the two first place awards in the national competition for the Samuel J. Crumbine Awards.

San Jose's award was for outstanding achievement in the development of an eating and drinking sanitation program and San Diego's, for outstanding achievement in the development of a comprehensive program of environmental sanitation. The awards are made annually by the Public Health Committee of the Paper Cup and Container Institute in memory of Dr. Crumbine, a pioneer in the public health field.

The contest which was open to the nearly 1,150 local health departments from coast to coast covered programs conducted in 1956. The awards took particular recognition of programs which were complete and balanced and which aroused specific public participation in an effort to obtain better sanitation.

The presentation of the award plaques and personal medallions were made to the winning health officers, Dwight Bissell, M.D., San Jose, and J. B. Askew, M.D., San Diego, at the annual banquet of the Western Branch American Public Health Association on May 30, in Long Beach, California.

Nursing Conference Set

Two conferences for nurses, part of a continuing education program, sponsored by the Western Council on Higher Education for Nursing, have been announced by the School of Nursing, University of California at Los Angeles, with the schools of nursing at Berkeley and San Francisco cooperating. They are designed for nurses in leadership positions who do not plan further formal study.

The California conferences will serve the States of California, Arizona and Nevada in providing the conference series and consultative visits to participants in the program.

The first conference will be held on June 7th to 12th, in conjunction with the Santa Barbara Conference for Administrators, Supervisors and Teachers, which has been scheduled for June 9th to 12th. The second conference of this year will probably be held in October on the U. C. L. A. campus. Tentatively, the 1958-59 conference will meet in February, June and October of each year.

The continuing education program is part of an over-all plan in the western region to develop better prepared leaders in nursing. Detailed information concerning fees, all conference housing and other arrangements, programs and application forms are available on request to University Extension, Medical, University of California, Los Angeles 24, California.

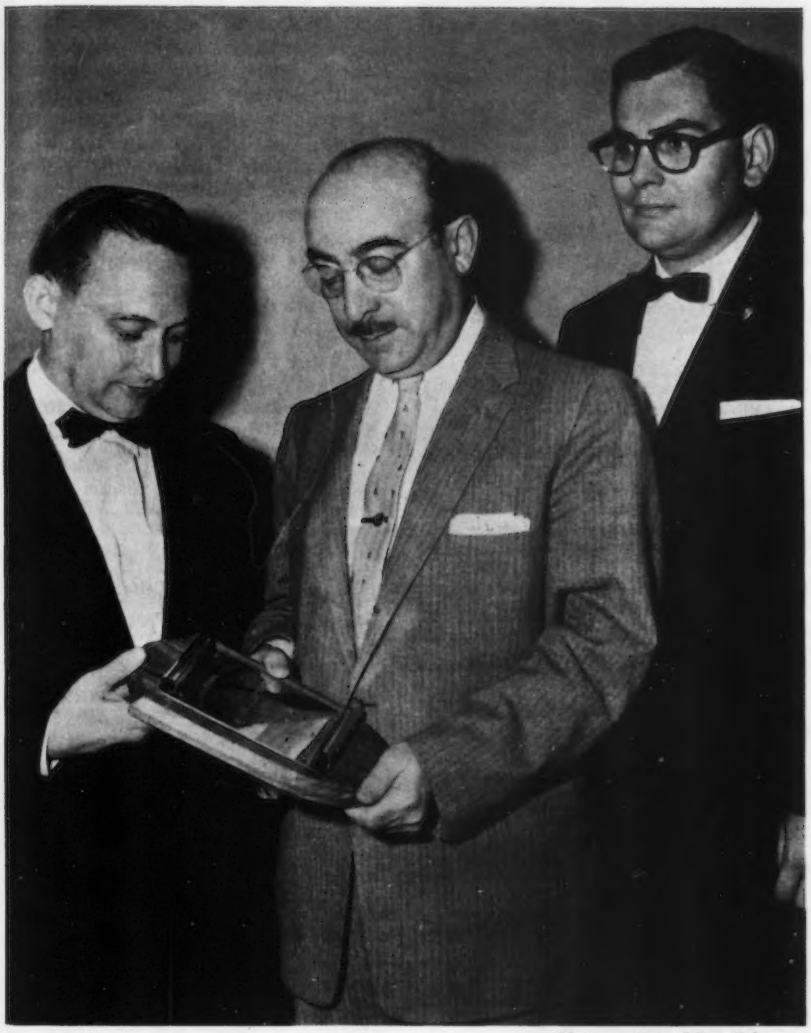
Graduate School Offers Cerebral Palsy Course

The Cook County Graduate School of Medicine announces an intensive course in neuro-muscular diseases of children with special emphasis on cerebral palsy, to be given by Doctor Meyer A. Perlstein for the two-week period from July 8th to 19th. This is an intensive, didactic and clinical course designed for pediatricians, orthopaedists, neurologists, psychiatrists and physiatrists interested in the care and treatment of children with neuro-muscular handicaps. For further information, write to: John W. Neal, Registrar, Cook County Graduate School of Medicine, 707 South Wood Street, Chicago, Illinois.

Home accidents caused at least 28,000 deaths in 1955.

Scope, March 13, 1957

DR. LITWACK RECEIVES GOOD GOVERNMENT AWARD



—Photo courtesy of Press-Telegram

Dr. Irving D. Litwack, Long Beach City Health Officer, was selected by the Long Beach Junior Chamber of Commerce to receive its Good Government Award for 1956 for the part he played in assuring Long Beach of "one of the most successful polio immunization programs in the United States." In the picture above Don G. Gill (left), outgoing President of the Junior Chamber of Commerce, presents Dr. Litwack with the award. With them is Eugene Kirkpatrick.

In presenting the award to Dr. Litwack, Mr. Gill said in part, "Dr. Litwack alerted the city to the promising future of this vaccine * * * (and) his foresight gave Long Beach an early start in the program for obtaining vaccine. * * * When difficulties arose with the serum, Dr. Litwack's understanding and assurance, and help from our medical society, quelled the near hysteria that developed in certain areas. * * * It was under his guidance that Long Beach went ahead with their program. * * *"

Dr. Litwack has been health officer of Long Beach since December, 1947.

Department Cooperating in Lake Arrowhead Conference

Methods of incorporating content in venereal disease in programs offered in schools of nursing and public health agencies will be considered at a conference for nurses, June 17th to 21st at the University of California's Lake Arrowhead Conference Center. Lake Arrowhead.

Cooperating groups include the California State Department of Health; U. C. L. A. School of Nursing; U. S. Public Health Service; the Health, Education and V. D. Council of Los Angeles; the Los Angeles County Health Department; California League for Nursing; and Los Angeles State College, Department of Nursing.

One unit of credit in Curriculum Development in Venereal Disease Nursing is optional. Scholarships are being granted to 60 participants.

Inquiries should be addressed to Miss Carroll at the U. C. L. A. School of Nursing, Los Angeles 24, California.

John Henderson Passes

John Henderson, Bureau of Hospitals, State Department of Public Health, died May 3d at Samuel Merritt Hospital in Oakland after an extended illness. Mr. Henderson became ill on March 15, 1957, and was admitted to the hospital on March 19th.

Mr. Henderson entered state service in 1938 and joined the department in 1940 as an investigator for the Bureau of Venereal Disease Control. In 1946 he was assigned to the Bureau of Hospitals as a hospital field representative. He was promoted to the position of supervising field representative in 1949 and to consultant in hospital planning in 1950; the position he held at the time of his death.

Mr. Henderson obtained a Master's Degree in Hospital Administration from the University of Minnesota in 1949. He is survived by his wife, Josephine, and two children, Judith and John Scott.

Mr. Henderson's passing is deeply regretted by his many friends in the department and throughout the State.

Doctor Trimble Slain

Harold Guyon Trimble, M.D., noted chest specialist and Consultant in Tuberculosis to the State Department of Public Health, was shot to death on May 8th by the husband of one of Dr. Trimble's former patients.

Dr. Trimble gained world renown in his specialty and pioneered the collapsed lung treatment for tuberculosis. In 1951, working with colleagues he found an effective method for controlling lung hemorrhaging, one of the major problems in the treatment of tuberculosis. On March 28th he was presented with the California Medal of the California Tuberculosis and Health Association for his outstanding contributions in the field of tuberculosis control.

Dr. Trimble was a fellow of the American Public Health Association, a fellow of the American College of Physicians, a diplomat, Board of International Medicine, and a fellow of the American College of Chest Physicians.

He was born in Oakland and received his medical degree from the University of California in 1920.

He is survived by his wife, Esther, and five children.

V. D. Research Lab Offers Courses

A series of courses for laboratory personnel on syphilis serology, to be held at the Venereal Disease Research Laboratory in Chamblee, Georgia, has been announced by the Communicable Disease Center, U. S. Public Health Service. In all, nine courses have been scheduled beginning September 9, 1957, and continuing through May 16, 1958.

Topics of the courses are as follows: Serology of Syphilis, Tests for Syphilis Using the Treponema Pallidum, Control of Syphilis Serology by the Regional Laboratory, and the Public Health Laboratory in Venereal Disease Control.

Applications and detailed information may be obtained by writing to Director, Venereal Disease Research Laboratory, Venereal Disease Branch, Communicable Disease Center, P. O. Box 185, Chamblee, Georgia.

Research Grants to Department Total Almost $1,000,000

The effect of air pollution on lung cancer, causative factors in alcoholism, development of prosthetic devices for child amputees, and public health measures in the prevention of blindness are four of the 27 special projects currently being conducted or sponsored by the California State Department of Public Health. Research grants totaling $966,716, in support of these projects, have been provided by the Kellogg Foundation, Rockefeller Foundation, National Foundation for Infantile Paralysis, American Cancer Society, the U. S. Public Health Service, the U. S. Children's Bureau, the National Institute of Health, the U. S. Army, the U. S. Communicable Disease Center, and the State of California.

The source of funds, description of project, location of project and amount of the grant follow:

U. S. Public Health Service		
To revise VD control procedures centering about the use of the TPCF test	San Mateo County Health Department	$850
Teaching of VD control services	U. C. L. A. Extension Division	6,000
U. S. Children's Bureau		
Care of children with congenital heart disease from other states	State Department of Public Health plus hospitals	$60,000
Kauai pregnancy study of fetal deaths	SDPH and University of California	16,500
To study vision testing in Orinda schools	Contra Costa County Health Department	6,500
To provide practical work experience in Alameda County for students of public health nutrition and others	Alameda County Health Department	1,882
To development prosthetic devices for child amputees	U. C. L. A.	86,636
Graduate training for social workers in public Health	U. C. School of Social Welfare	62,947
A study of the child health conference in the community setting	SDPH	66,150
Training grants in nutrition and maternal and child health	U. C. School of Public Health	48,800
To study mental retardation in children	Children's Hospital of Los Angeles	41,073
To study hearing problems of pre-school children	John Tracy Clinic	11,372
To hold two workshops and a community conference on mental retardation problems	Long Beach College San Francisco College	6,025 3,300
National Institute of Health		
To furnish data on a national chemo-therapy evaluation program in cancer	SDPH	$8,753
To study the etiology of nonbacterial gastroenteritis by use of newer tissue culture techniques	SDPH	26,620
To study the relation of air pollution to bronchitis	SDPH	25,652
U. S. Army		
Influenza vaccine evaluation	SDPH and Fort Ord	$124,109
U. S. Communicable Disease Center		
For polio virus laboratory studies	SDPH	$36,000
State of California		
To study medical status of aid to needy children cases	SDPH	$17,353
Medical care	SDPH	11,626
Causation and follow-up studies on alcoholism	SDPH	88,700
Kellogg Foundation		
To investigate public health methods of preventing blindness	SDPH	$65,248
Rockefeller Foundation		
To study California arthropod-borne virus diseases	SDPH	$27,500
To provide an epidemiological approach to chronic disease	SDPH	49,900
National Foundation for Infantile Paralysis		
To obtain more potent complement fixing antigens and to evaluate the complement fixation test	SDPH	$31,729
American Cancer Society		
To study the effect of air pollution on lung cancer	SDPH	$35,491

DR. WALTER DICKIE PASSES

Dr. Walter Murray Dickie, former Director of the California State Department of Public Health, died at his Berkeley home May 8th after a brief illness. He was 82.

Dr. Dickie served a total of 16 years as head of the department, holding office under four governors, 1920-1931 and 1935-1940. He began his public health career in 1917 as an investigator for the newly created Bureau of Social Hygiene, later that year he was appointed chief of the bureau, and was the first person to hold the title of State Director of Public Health. Formerly the position was Secretary to the Board of Health.

During his years of service, Dr. Dickie was responsible for many health safeguards, including the requirement for prenatal and premarital blood tests. During the 1920's under his leadership and guidance, with funds from the Rockefeller Foundation, full time local health departments were successfully promoted. In 1935 with assistance of Social Security funds the establishment of local health departments was further stimulated and the foundations of modern public health organization were laid. The fields of sanitation, malaria control, cannery inspection, dental health, public health nursing, venereal disease control, adult health, and maternal and child health were expanded and strengthened during his administration.

Dr. Dickie appointed Dr. Malcolm Merrill to his first position in the department as Chief of the Bureau of Venereal Disease.

Dr. Walter Dickie

Born in Ottawa, Canada, Dr. Dickie attended San Francisco schools and the University of California, graduating from the School of Medicine in 1901.

He was a fellow of the American Public Health Association and a member of the American Medical Association.

He is survived by his wife, Mary Johnson Dickie, and two sons, Alexander, an electrical engineer, of Alhambra, and Walter M., Jr., of Oakland, an attorney.

Source of Salmonella Reading Outbreaks Sought

The California State Department of Public Health is currently cooperating with the U. S. Public Health Service, Communicable Disease Center, in the investigation of a probable common source epidemic of *Salmonella reading*. A preliminary survey by the Public Health Service has indicated that 264 cases have occurred throughout the Country since August, 1956; 30 of these cases have been reported from California. During the first quarter of this year there has been a considerable increase in the number of cases reported, and it is anticipated that additional cases will occur before the outbreak reaches a peak. The majority of isolates have been from children.

Although presumably a common source outbreak, no definite vehicle has yet been established for the spread of the infection. Dried and commercially prepared food products such as powdered milk and eggs have been incriminated in previous outbreaks. Local health departments in the State are currently submitting all positive Salmonella cultures to the California State Department of Public Health Bacteriology Laboratory for typing, as well as carrying out epidemiological investigations on those cultures classified as *S. reading*.

Public Health Positions

Kern County

Public Health Nurses: Salary range, $355 to $433. Generalized program, including school nursing. California Public Health Nursing certificate required. For application and details contact Kern County Health Department, Box 997, Bakersfield.

Los Angeles County

Senior Statistician, Public Health: Salary range, $464 to $575. To serve as chief of a statistical section of Division of Vital Records. Bachelor's degree and two years' experience required. For further information write Los Angeles County Civil Service Commission, 501 North Main Street, Los Angeles 12.

City of Pasadena

Health Officer: Salary range, $880 to $1,072. To administer a complete health program. Candidates must be licensed to practice medicine in California, M. P. H. degree or at least three years' experience in public health administration. Apply Personnel Department, Pasadena City Hall.

Sacramento County

Alcoholic Rehabilitation Worker I and II: Salary currently starting at third step in range. For I, $412, for II, $455. Expected July 1st: I, $412-$502; II, $455-$533. Required for I: two years' graduate work specialized in medical or psychiatric social work. One year experience in such work may be substituted for one year of graduate work. Required for II: same as I, but with additional two years' experience required. One additional year of experience may be substituted for one year of graduate training.

Chief Public Health Nursing Division: Salary range currently $478-$581. Recruiting at $527. Expected July 1st, $527-$641. Required: training and experience equivalent to M.A. in Public Health Nursing and five years' public health nursing experience, with one year as supervisor. Registration in California as R. N. and P. H. N. Applicants not so registered must do so prior to appointment.

Physical Therapist: Salary, $355-$433. Expected July 1st, $373-$455. Required: graduation from recognized school of physical therapy and one year experience as physical therapist. Immediate appointment, subject to examination.

Public Health Nurse I and II: Salary, $322-$392 for I, $355-$433 for II. Expected July 1st: I, $355-$433; II, $392-$478. Required for I: training and experience equivalent to one year in public health nursing and certification as R. N. in California; II: same as for I, except that California P. H. N. certificate required. Three current vacancies. Immediate appointment subject to oral examination.

Public Health Analyst: Salary, $392-$478. Expected July 1st, $412-$502. Required: training and experience equivalent to college degree including courses in statistics. Immediate appointment, subject to examination.

Write Sacramento County Civil Service Department, Courthouse, Room 212, Sacramento, California.

Comparative Data for Cases of Selected Notifiable Diseases California, Month of April, 1957

Disease	Cases reported this month			Cumulative cases from January 1		
	1957	1956	1955	1957	1956	1955
Anthrax	--	--	--	--	--	--
Botulism	--	--	--	--	--	--
Brucellosis	6	3	3	10	13	19
Coccidioidomycosis [1]	33	14	11	71	56	27
Diarrhea of newborn	--	--	2	9	2	4
Diphtheria	--	--	--	4	12	10
Encephalitis, acute [2]	47	43	24	135	155	100
Gonococcal infections	1,154	978	1,108	5,207	4,717	4,859
Hepatitis, infectious	136	125	133	644	699	712
Hepatitis, serum	9	13	1	36	32	20
Leprosy	2	--	1	8	2	7
Leptospirosis	--	1	--	--	2	--
Malaria	3	--	1	6	6	6
Measles	9,699	5,003	14,286	34,599	14,052	34,763
Meningococcal infections	24	18	20	79	118	114
Mumps	2,432	4,289	4,199	9,247	19,146	15,178
Pertussis (whooping cough)	88	146	594	436	661	2,246
Poliomyelitis—total	37	73	53	134	419	252
Psittacosis	6	3	2	13	12	14
Q fever [3]	6	9	NR	10	17	NR
Relapsing fever	--	--	--	--	--	--
Rabies, animal	16	27	42	39	142	82
Rocky Mt. spotted fever	--	1	--	--	1	1
Salmonellosis	144	97	69	324	387	272
Shigellosis	109	114	78	369	581	336
Streptococcal infections (including scarlet fever)	823	490	817	3,942	2,540	4,262
Syphilis	647	526	491	2,141	2,000	2,062
Tetanus	1	2	2	6	12	15
Trachoma	--	1	--	1	3	1
Trichinosis	--	2	--	--	4	--
Tuberculosis	467	628	526	2,287	2,248	2,357
Tularemia	1	--	1	1	1	2
Typhoid fever	4	7	10	18	30	35
Typhus fever, endemic	--	--	--	1	2	1

[1] Since July 1, 1955—Active primary (including cavitary) and disseminated coccidioidomycosis reportable.
[2] Encephalitis, acute, includes arthropod-borne infections, post infectious cases, and those with etiology undetermined.
[3] NR—Not reportable prior to July 1, 1955.

In isolated communities, infectious diseases do not, as a rule, return until a new generation of nonimmune persons has grown up.—*This Week in Public Health, Mass. Newsletter Vol. 5, No. 48, November 26, 1956, issue.*

At the rate the West is training mental health specialists, it will take 29 years to produce the needed number of psychiatrists; 21 years for clinical psychologists; 9 years for psychiatric social workers. *Western States Mental Health Survey.*

Nurses Attend Rome Conference

Bernice Klumb and Romaine Smith, General Nursing Consultants, and Elizabeth Tuljus, Industrial Nursing Consultant, California State Department of Public Health, attended the eleventh quadrennial International Congress of Nurses as representatives from the American Nurses Association. The meetings were held in Rome from May 27th to June 1st. Rena Haig, formerly Chief, Bureau of Public Health Nursing, also attended the Congress as a California representative.

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